نام و نام خانوادگی ...محمدرضا اشراقی... پاسخنامه تشریحی تکلیف شماره ...۱۵... کلاس ...دهم B...

$a \times aq \times aq^2 = 64 \Rightarrow a^3q^3 = 64 \Rightarrow aq = 4$ $q = 4$ و $q = \frac{1}{4}$ غ ق ق

$a(1+q+q^2) = 21$ $16q^2 - 68q + 16 = 0$

$\Rightarrow \frac{1+q+q^2}{aq^2} = \frac{21}{16} \Rightarrow \frac{\cancel{1+q}+q^2}{4q} = \frac{21}{16}$ $4q^2 - 17q + 4 = 0$ ۱

$\Rightarrow \cancel{q^2} - 17q + 16 = 0$

$(\cancel{a}q \times q) = 16$ $(q-1)(q-16) \Rightarrow q = 1,\ q = 16$

$(2x)^2 = (x^2-2)(x^2+4)$ x^2+4 و $2x$ و x^2-2

$4+4=8$ و $2x$ و $4-2=2$

$4x^2 = (x^4 + 2x^2 - 8)$ 8 و 4 و 2 ۲

$(x^2+2)(x^2-4)$ $S_n = a_1\left(\frac{1-q^n}{1-q}\right) \Rightarrow 8\left(\frac{1-(\frac{1}{2})^7}{1-\frac{1}{2}}\right)$

$x^2 = -2$ غ ق ق و $+4$ $\Rightarrow x = \pm 2$ غ ق ق $\xRightarrow{q>0} \boxed{q = \frac{1}{2}}$ $16 \times (1-(\frac{1}{2})^7) = ? \Rightarrow ? = \boxed{15.875}$

$1+q+q^2+q^3+q^4 = \frac{121}{81}$ $\times a$ $\Rightarrow a + aq + aq^2 + aq^3 + aq^4 = a \times \frac{121}{81}$

$a_1 = 243$

$243 + 243q + 243q^2 + 243q^3 + 243q^4 = \cancel{243}^{3} \times \frac{121}{\cancel{81}} = \boxed{363}$ جواب ۳

$120 = 243(q+q^2+q^3+q^4)$

$A = \frac{64+1}{2} = 32.5$

$B^2 = 64 \times 1 \Rightarrow B = \pm\sqrt{64 \times 1} \Rightarrow B = \pm 8$

$\left.\begin{matrix} A = 32.5 \\ B = -8 \end{matrix}\right\} \Rightarrow A + B = 24.5$ ۴

۲ جواب دارد.

$\left.\begin{matrix} A = 32.5 \\ B = 8 \end{matrix}\right\} \Rightarrow A + B = 40.5$

-24 و $-\frac{95}{4}$ و ... $t_{101} = a_1 + 100d \Rightarrow -24 + 25 = 1$

$+\frac{1}{4}$ $\Rightarrow a_n = \frac{1}{4}n - 24.25$

128 و a_2 و ... و $\frac{1}{128}$ ۵

$\frac{1}{2}$

$a_8 = 1 \Rightarrow a \times q^7 = 1 \Rightarrow q^7 = \frac{1}{128} \Rightarrow \boxed{q = \frac{1}{2}}$

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$t_7 = t_1 + 6d$
$t_3 = t_1 + 2d$
$t_9 = t_1 + 8d$

$\Rightarrow (t_1 + 6d)^2 = (t_1 + 2d)(t_1 + 8d)$

$\cancel{t_1^2} + 12d + 36d^2 = \cancel{t_1^2} + 10 t_1 d + 16 d^2$

$20 d^2$

$2 t_1 d + 20 d^2 = 0 \Rightarrow 2d(t_1 + 10 d) = 0 \Rightarrow 2 t_1 d = -20 d^2 \Rightarrow t_1 = -10 d$

d نمی‌تواند صفر باشد

$\boxed{d = \frac{-t_1}{10}}$ ۶

$a_2 = a + d$
$a_4 = a + 3d$
$a_8 = a + 7d$

$\Rightarrow (a+d)(a+7d) = (a+3d)^2$

$\cancel{a^2} + 8d + 7d^2 = \cancel{a^2} + 6da + 9d^2$ ۷

$2ad = 2d^2 \Rightarrow ad = d^2 \Rightarrow \boxed{a = d}$

$2ad - 2d^2 = 0 \Rightarrow 2d(a-d) = 0 \Rightarrow 2d = 0 \Rightarrow d = 0 \Rightarrow$ غیر قابل قبول

$a_2 = 2d$
$a_4 = 4d$
$a_8 = 8d$

$2d ,\ 4d ,\ 8d \quad \times 2$

$\Rightarrow q = 2 \Rightarrow a_{10} = \frac{1}{4} \times 2^9 = \boxed{128}$

$3aq$ و $2aq^2$ ، aq^3

$2aq^2 = \frac{3aq + aq^3}{2} \Rightarrow 4aq^2 = 3aq + aq^3$ ۸

$\cancel{aq}(4q) = \cancel{aq}(3 + q^2) \Rightarrow 4q = 3 + q^2$

aq غیر صفر است چون غیر ثابت است

$q^2 - 4q + 3 = (q-1)(q-3) = 0$

$(x + a_4)(a_{13} + x) = (a_8 + x)^2$

$(x + \frac{5}{4})(x - 1) = (x + \frac{1}{4})^2$

$x^2 + \frac{1}{4}x - \frac{5}{4} = x^2 + \frac{1}{2}x + \frac{1}{16}$

$\frac{1}{4}x = -\frac{21}{16} \Rightarrow x = -\frac{21}{4} \Rightarrow \boxed{q = \frac{5}{4}}$

$a_n = -4 ,\ -5 ,\ -\frac{25}{4} \quad \times\frac{5}{4}$

$a_n = 2 ,\ \frac{7}{4}$

$d = -\frac{1}{4}$

$a_n = -\frac{1}{4}n + \frac{9}{4}$

$a_4 = \frac{9}{4} - 1 = \frac{5}{4}$

$a_8 = \frac{9}{4} - 2 = \frac{1}{4}$

$a_{13} = -\frac{1}{4} \times 13 + \frac{9}{4} = -1$

$a + aq^2 + aq^4 = 73$

$a = a$
$a + d = aq^2$
$a + 9d = aq^4$

$\Rightarrow (a+d)^2 = a(a + 9d)$

$a^2 + 2ad + d^2 = a^2 + 9ad$ ۱۰

$d^2 - 7ad = 0$

$d(d - 7a) = 0$

$d - 7a = 0$

$d = 0 \rightarrow$ دنباله ثابت

$d - 7a = 0 \Rightarrow a = \frac{1}{7} d$

$\frac{1}{7} d + \frac{8}{7} d + \frac{64}{7} d = 73 \Rightarrow \frac{73}{7} d = 73 \Rightarrow d = 7$